

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) A shopping system, comprising:  
a shopping cart including a plurality of wheels;  
a portable electronic device, coupled to the shopping cart, for displaying shopping data; and  
a distance measuring system, coupled to one of the plurality of wheels, for providing a distance signal based on the movement of the wheel and indicating a distance of movement of the shopping cart; and  
an energy generator, coupled to one of the plurality of wheels, for adding energy to a power source of the portable electronic device.

2. (currently amended) A shopper tracking system, comprising:  
a shopping cart including a plurality of wheels;  
a portable electronic device, coupled to the shopping cart, for displaying shopping data; and  
a position mapping system, coupled to the portable electronic device, for developing a shopper location relative to a start location, the mapping system including  
a distance measuring system, coupled to one of the plurality of wheels, for providing a distance signal based on the movement of the wheel and indicating a distance of movement of the shopping cart; and  
a direction measuring system for providing a direction signal concurrent with the distance signal.

3. (original) The shopper tracking system of claim 2 further comprising:  
a position locating system, coupled to the portable electronic device, for entering absolute coordinates of the start location.
4. (currently amended) The shopper tracking system of claim 2 further comprising:  
a merchandise reader, coupled to the portable electronic device, for detecting merchandise identification data from a merchandise element proximate the portable electronic device; and  
a database, coupled to the portable electronic device, for storing absolute coordinate data for the merchandise element;  
the ~~POS~~ portable electronic device using the absolute coordinate data of the merchandise element to adjust the shopper location.
5. (currently amended) The shopper tracking system of claim 4 wherein the merchandise reader is a bar code scanner and the merchandize identification data is a UPC bar code associated with the merchandise element.
6. (original) The shopper tracking system of claim 4 wherein the database is remotely located relative to the portable electronic device and the portable electronic device is coupled to the database using a wireless transmission system.
7. (original) The shopper tracking system of claim 4 wherein the database is written into a memory of the portable electronic device.

8. (currently amended) The shopper tracking system of claim 2 further comprising:  
a merchandise reader, coupled to the portable electronic device, for detecting merchandise identification data from a merchandise element proximate the portable electronic device, ~~and~~  
~~a database, coupled to the portable electronic device, for storing absolute coordinate data for the merchandise element;~~  
wherein the portable electronic device ~~using the~~ uses stored absolute coordinate data associated with ~~of~~ the merchandise element to adjust the shopper location.

9. (original) The shopper tracking system of claim 2 wherein the portable electronic device enters a reduced power consumption mode when the distance measuring signal indicates that the shopping cart has not moved at least a first threshold distance within a second threshold period.

10. (new) The shopping system of claim 1, wherein the distance measuring system and the energy generator are coupled to the same one of the plurality of wheels.

11. (new) The shopping system of claim 1, wherein the distance measuring system indicates a distance of movement of the shopping cart by measuring a number of whole or partial rotations of the wheel to which the distance measuring system is coupled.

12. (new) The shopping tracking system of claim 4 wherein the absolute coordinate data of the merchandise element is not used to adjust the shopper location if the absolute coordinate data designates a location that is more than a threshold distance away from the relative shopper location.

13. (new) The shopping tracking system of claim 2 wherein the distance measuring system determines a distance by measuring a number of whole or partial rotations of the wheel to which the distance measuring system is coupled.

14. (new) The shopping tracking system of claim 2 wherein the direction measuring system includes a direction-sensing device that provides the direction signal without the use of signals originating externally from the shopping cart.

15. (new) The shopping tracking system of claim 2 wherein the direction measuring system measures a direction of movement of the shopping cart by using a compass function of the portable electronic device.

16. (new) The shopping tracking system of claim 2 wherein the direction measuring system measures a direction of movement of the shopping cart by using a plurality of encoders coupled to at least one of the wheels of the shopping cart.

17. (new) The shopping tracking system of claim 2 wherein at least one wheel of the shopping cart is pivotally coupled to the shopping cart and provides the direction signal.

18. (new) A shopper tracking system, comprising:

a shopping cart including a plurality of wheels;

a portable electronic device, coupled to the shopping cart, for displaying shopping data; and

a position mapping system, coupled to the portable electronic device, the mapping system including

a relative positioning system, coupled to one of the plurality of wheels of the shopping cart, for determining the distance and direction the shopping cart has moved relative to a start location based on movement of the wheel, to determine the relative location of the shopping cart within a predetermined area, and

an absolute positioning system in communication with the portable electronic device for establishing an absolute position of the shopping cart within the predetermined area, wherein the absolute position is used to adjust the relative location of the shopping cart.

19. (new) The shopper tracking system of claim 16, wherein the relative positioning system determines a distance by measuring a number of whole or partial rotations of the wheel to which the distance measuring system is coupled.

20. (new) The shopper tracking system of claim 16, wherein the absolute positioning system includes:

a merchandise reader, coupled to the portable electronic device, for detecting merchandise identification data from a merchandise element proximate the portable electronic device; and

a database, coupled to the portable electronic device, for storing absolute position data for the merchandise element,

the portable electronic device using the absolute position data of the merchandise to adjust the location of the shopping cart.